University of Sargodha

Term Project

Object Oriented Analysis and Design

Project: **Hospital management System**

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Hospital Management System

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1. Introduction

This hospital has required a system that maintains its hospital Management System as well as keeps the record of the Hospital in database. This software manages all information about patient name, patient address, doctor information, staff information etc. it also stores daily information of patient Which is done by doctor. Also store inform action about billing, finally it calculates total bill of patient.

The proposed software product is the Hospital Management System (HMS).

- The system will be used to get the information from the patients and then storing that data for future usages.
- The current system in use is a paper-based system. It is too slow and cannot provide updated lists of patients within a reasonable timeframe.
- The intentions of the system are to reduce over-time pay and increase the number of patients that can be treated accurately.
- Requirements statements in this document are both functional and non-functional.

2. Overall System Description

The fully functional automated hospital management system which will be developed through this project will eliminate the disadvantages caused by the manual system by improving the reliability, efficiency and performance. The usage of a database to store patient, employee, stock details etc. will accommodate easy access, retrieval. search and manipulation of data. The access limitations provided through access privilege levels will enhance the security of the system. The system will facilitate concurrent access and convenient management of activities of the medical center.

Product Functions:

- OPD and Consultation Management
- Employee and Salary Management System
- Ward Management
- Transport Management
- Emergency Treatment and Equipment Management
- Pharmacy Stock Management
- Lab Management

3. Functional Requirements

- **Registration**
  - Add Patient
  - Assign ID
  - Delete Patient ID
  - Add Doctor
  - Delete Doctor
- **Report Generation**
  - Patient Information
  - Bed Availability
- **Database**
  - Patient Mandatory Information
  - Update Patient Information

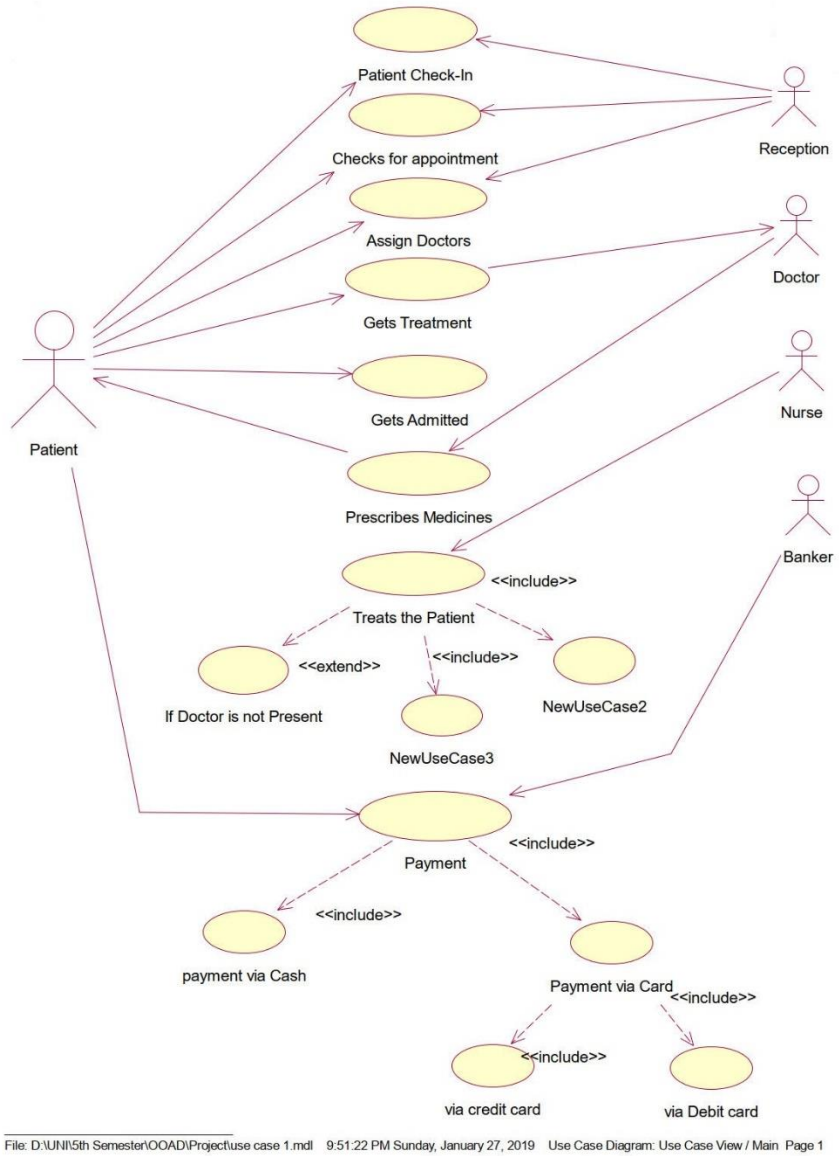
4. Non- Functional Requirements

- Performance
- Resonance time
- Capability
- User- Interface
- Security
  - Patient Identification
  - Login ID
  - Administrators Rights
- Reliability
- Availability
- Software Quality
- Reusability
- Maintainability

5.Software Design (Diagrams)

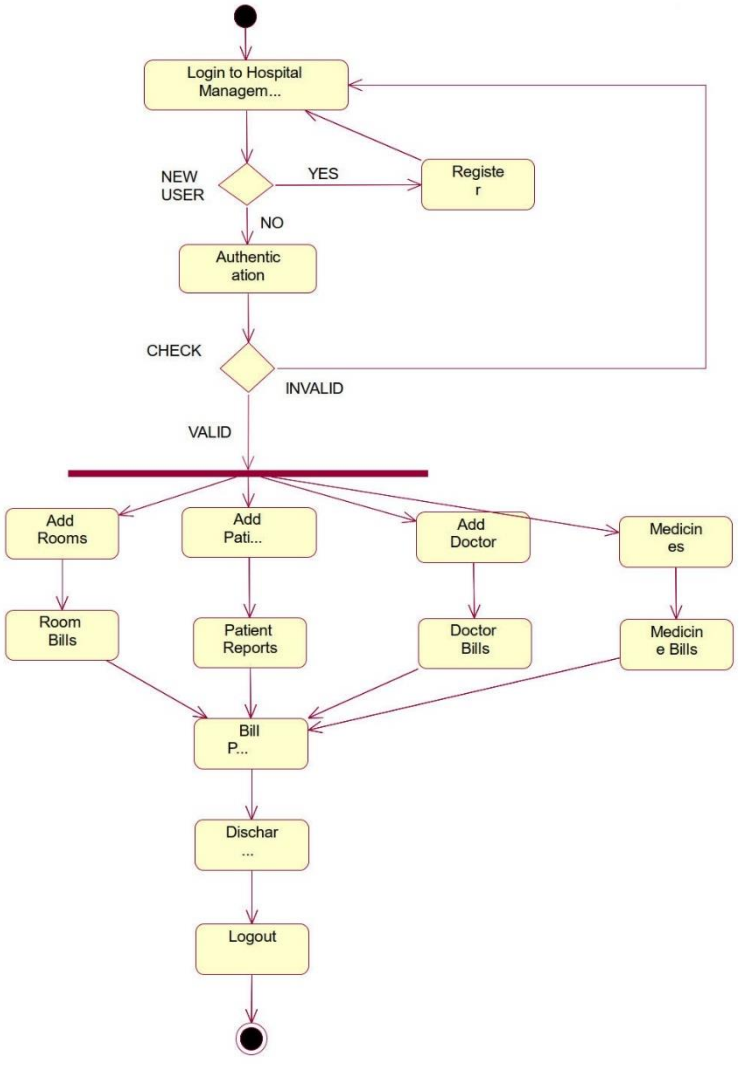
➢ Use case Diagram:

A use case diagram is a graphical depiction of a user's possible interactions with a system. A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses.



➢ Activity Diagram:

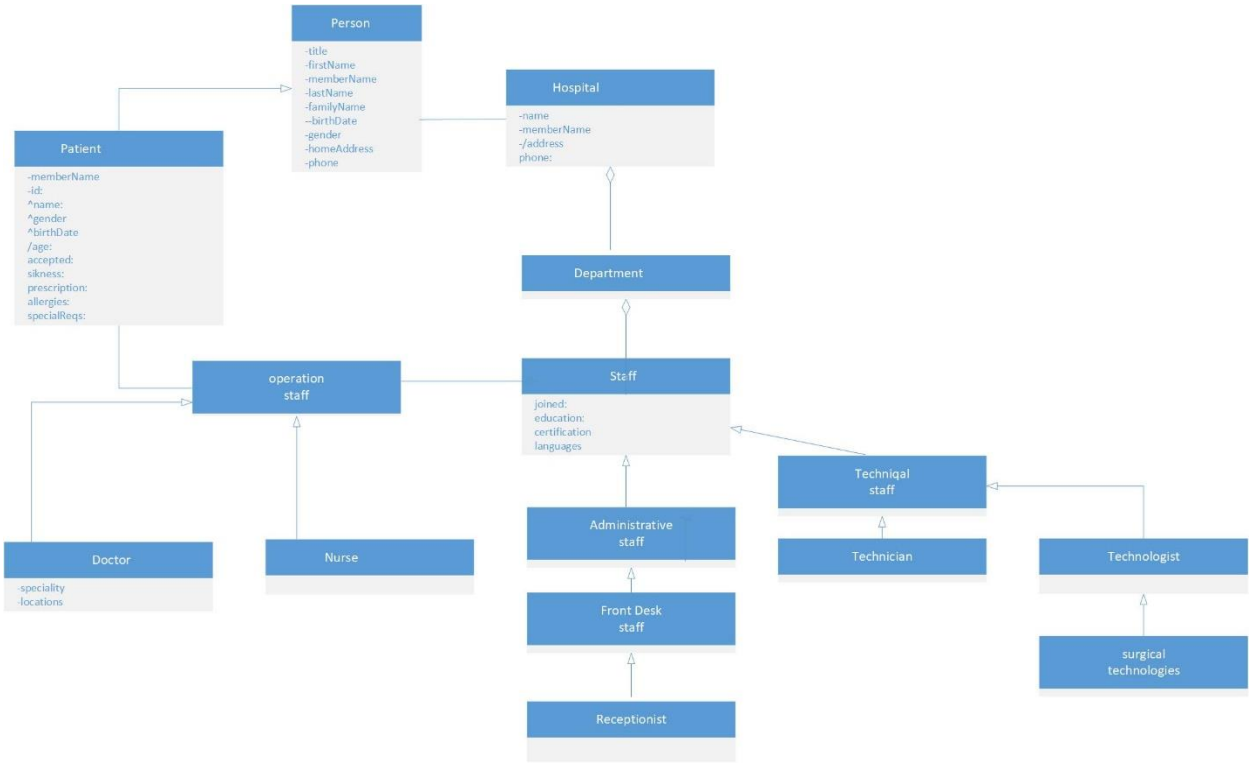
Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams are intended to model both computational and organizational processes (i.e., workflows), as well as the data flows intersecting with the related activities. Although activity diagrams primarily show the overall flow of control, they can also include elements showing the flow of data between activities through one or more data stores.



File: D:\UNI\5th Semester\OOAD\Project\Activity DIAGRAM.mdl 9:46:46 PM Sunday, January 27, 2019 Activity Diagram: Use Case View / Activity Diagram Page 1

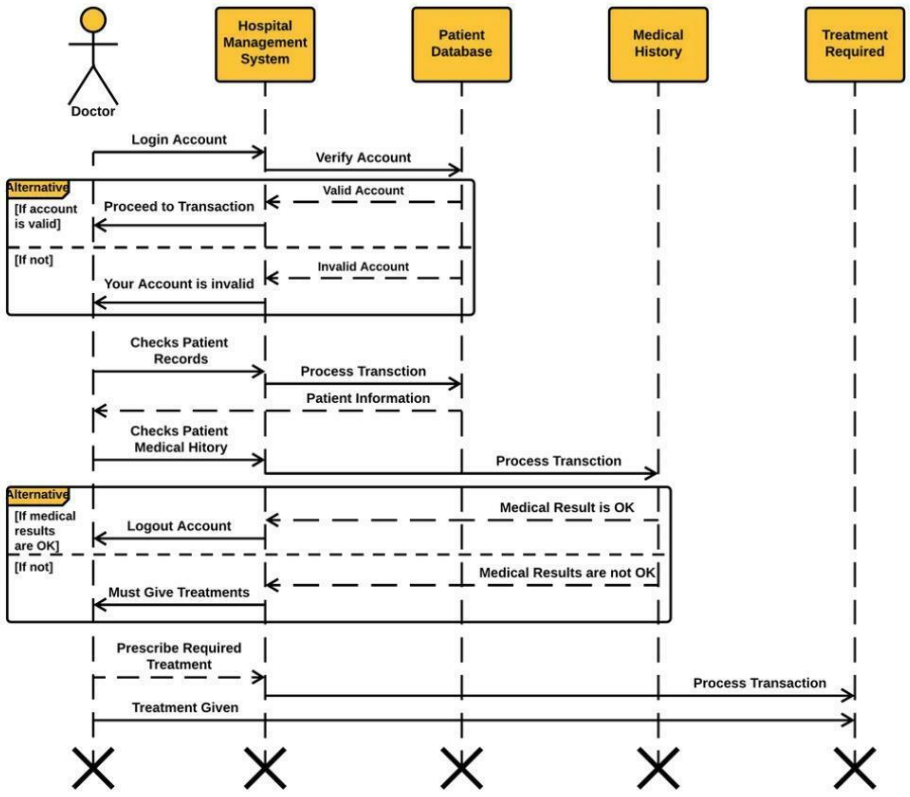
➢ Class Diagram:

A class diagram in the (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects.



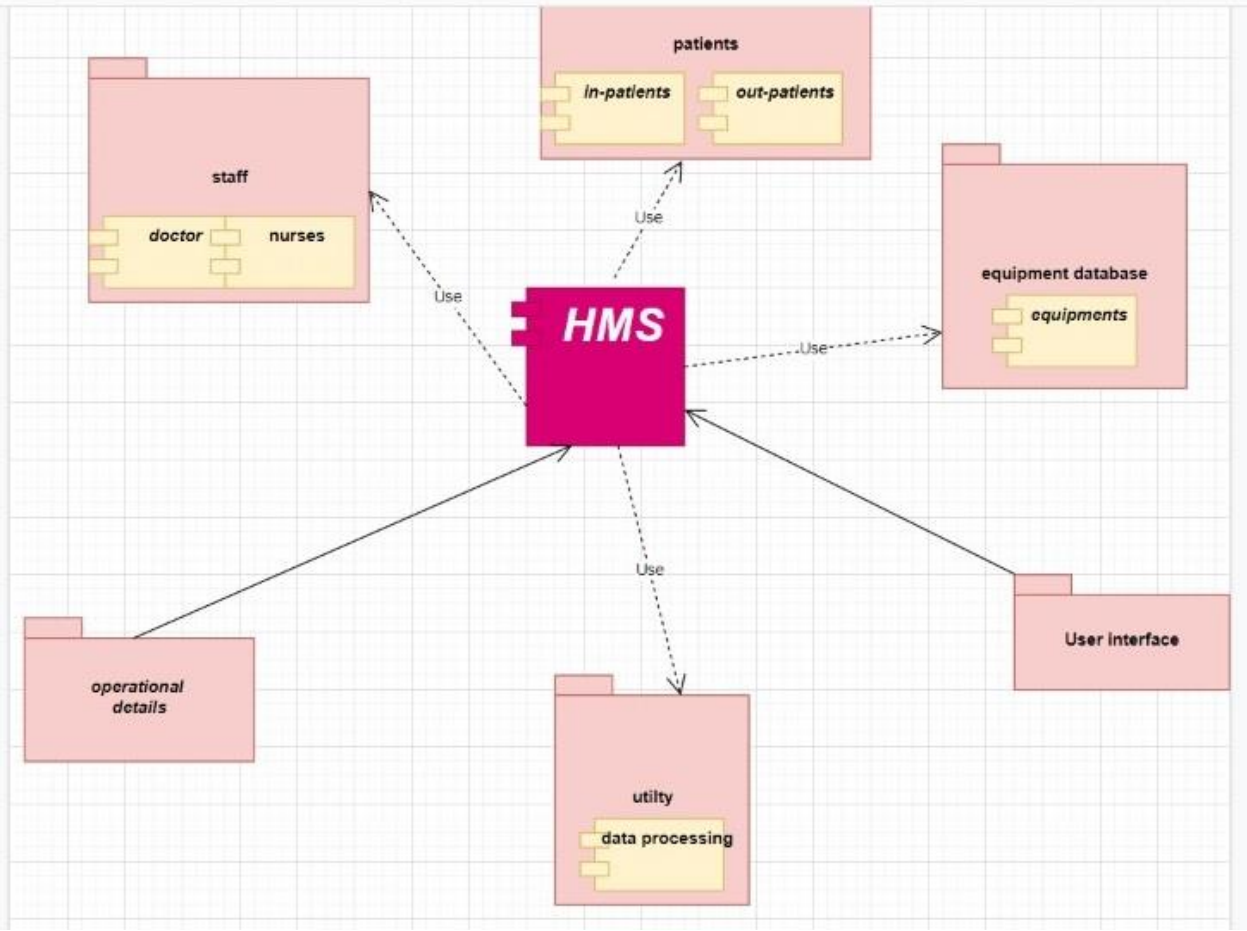
➢ Sequence Diagram:

A sequence diagram or system sequence diagram (SSD) shows object interactions arranged in time sequence in the field of software engineering. It depicts the objects involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of scenario.



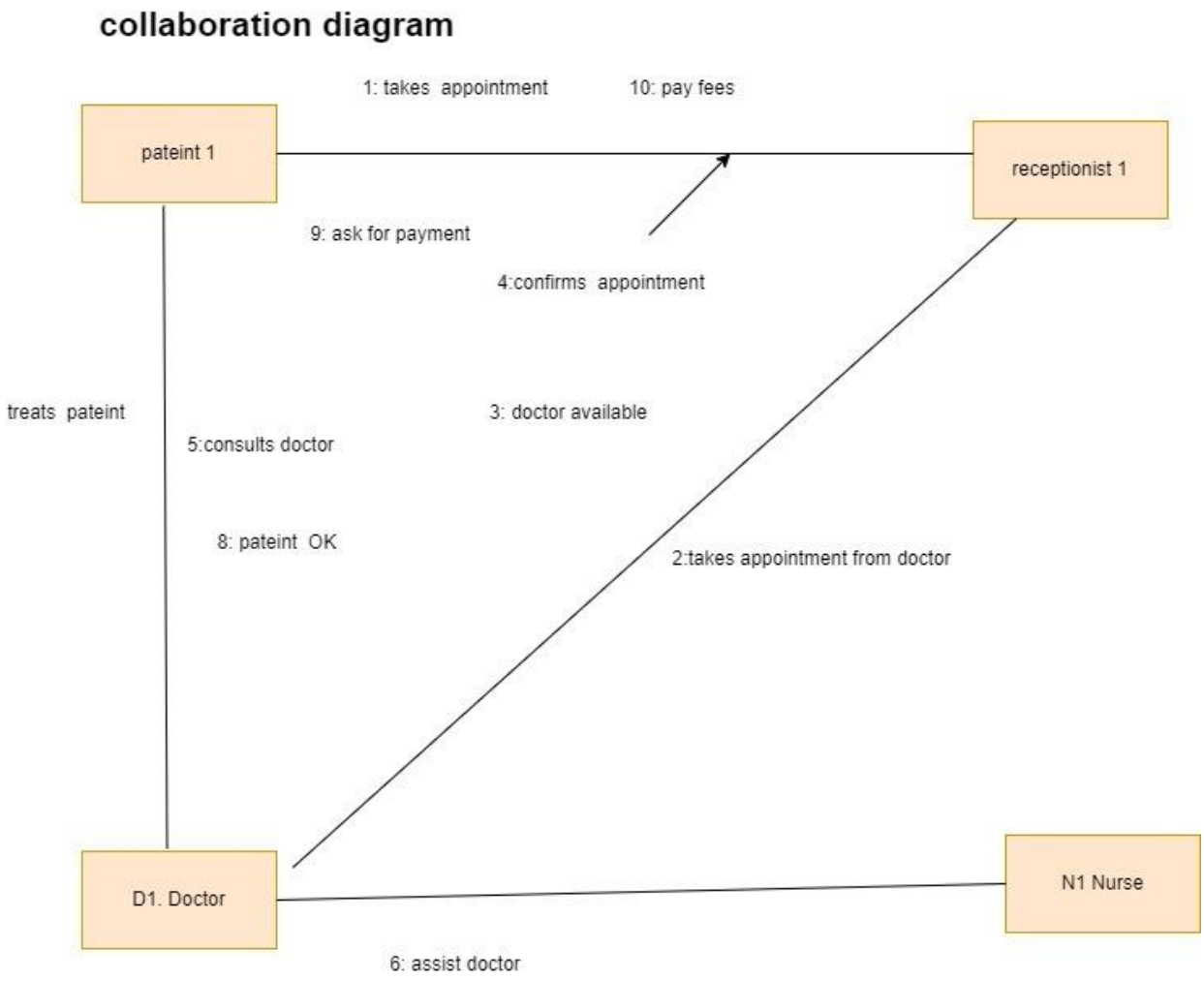
➢ Component Diagram:

In Unified Modeling Language (UML), a component diagram depicts how components are wired together to form larger components or software systems. They are used to illustrate the structure of arbitrarily complex systems.



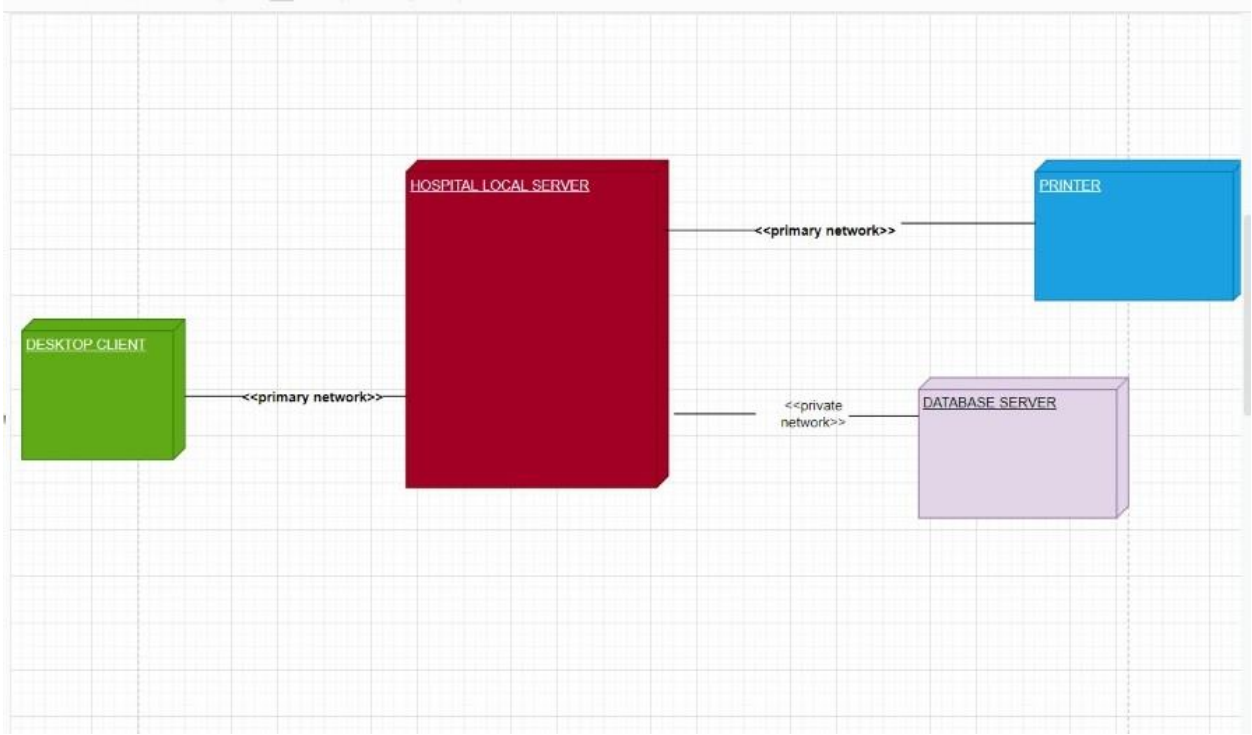
➢ Collaboration Diagram:

A collaboration diagram, also known as a communication diagram, is an illustration of the relationships and interactions among software objects in the Unified Modeling Language (UML). These diagrams can be used to portray the dynamic behavior of a particular use case and define the role of each object.



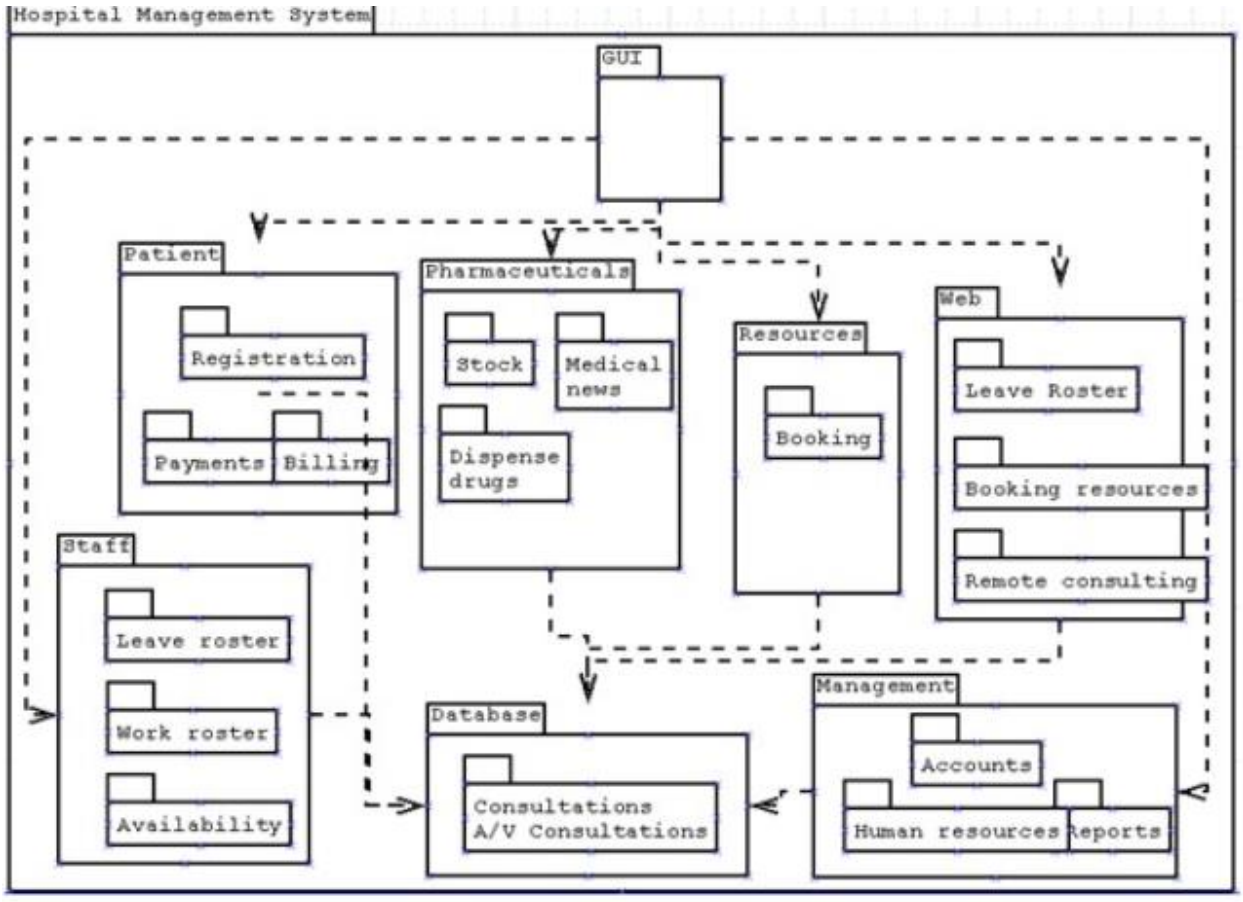
➢ Deployment Diagram:

A deployment diagram in the UML models the physical deployment of artifacts on nodes. To describe a web site, for example, a deployment diagram would show what hardware components ("nodes") exist (e.g., a web server, an application server, and a database server), what software components ("artifacts") run on each node (e.g., web application, database), and how the different pieces are connected.



➢ Package Diagram:

Package diagram, a kind of structural diagram, shows the arrangement and organization of model elements in middle to large scale project. Package diagram can show both structure and dependencies between sub-systems or modules, showing different views of a system, for example, as multi-layered application - multi-layered application model.



6.Tools and Reference

Tools

- Rational Rose
- MS Visio
- Lucid Chart

Reference

- https://en.wikipedia.org/
- https://searchsoftwarequality.techtarget.com/
- https://www.slideshare.net/

THE END